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# Turbonomic 7.22.6 REST API Changes

August 10, 2020

This document describes issues that result in changes to the REST API. It is a running list of changes that accumulates these changes until the next release of the API Programming Guide. When we release a new version of the programming guide, it will include these changes. At that time, the list will start with new change to the API.

Because the API is a full reflection of the Turbonomic product, some changes to the product necessarily cause changes in the API. This can include bug fixes and improvements to the product. For example, we might add new commodities that you can get for a given entity type. Or a bug fix might change the data that is returned by an API request. We strive to make these changes backward-compatible whenever possible.

## REST API Changes

- **Improvement:**

Fix Version: 7.22.3

**Customer Issue 110695**

**Improvement:** To support the user interface improvements for setting cloud tiers as scaling constraints, the API now includes new filters to create groups for the following instance types:

- VM Instance Type (compute tier)
  - `computeTiersByName` to filter by display name
  - `computeTiersByMem` to filter by VM memory capacity
- Database Instance Type (database tier)
  - `databaseTiersByName` to filter by display name
  - `databaseTiersByDBMem` to filter by database memory capacity
- Database Server Instance Type (database server tier)
  - `databaseServerTiersByName` to filter by display name
  - `databaseServerTiersByVMem` to filter by database server memory capacity

- **Improvement:**

Fix Version: 7.22.5

**Improvement:** Horizon VDI targets now report the number of connected sessions in use, as well as the total number of connected sessions (in use and not in use).

As part of this improvement, the API introduces the new group and search filter, `vmsByActiveSessions`.

- **Improvement:**

Fix Version: dbScalingImprovements

**Improvement:** The new settings `percentileAggressivenessDatabase` and `maxObservationPeriodDatabase` were added to the `marketsettingsmanager` to support Azure Single Databases

- **Improvement:**

Fix Version: 7.22.6

**Improvement:** For policies affecting Virtual Machines, the "Move / Compute Scale" setting has been separated into two settings: "On-Prem Compute Move" for workloads running on-premises, and "Cloud Compute Scale", for workloads running on cloud targets. The functionality of the settings are unaffected.

- **Improvement:**

Fix Version: 7.22.6

**Improvement:** When a reservation fails, Turbonomic now provides information to describe the cause of the failure, when known.

- **Improvement:**

Fix Version: 7.22.5

**Improvement:** For policies, the boolean parameter used to set SLO status has been changed from "Disable SLO" to "Enable SLO".

- **Improvement:**

Fix Version: 7.22.5

**Deprecation:** The entity types `Application` and `ApplicationServer` have been deprecated. Instead, use the `ApplicationComponent` entity type.

- **Improvement:**

Fix Version: 7.22.5

**Improvement:** The following filters are now available for Group creation:

- `vmsHotAddMemory`
- `vmsHotAddCPU`
- `vmsHotRemoveCPU`

These filters allow for group membership based on the ability to add CPU and Memory to a running instance, or remove CPU from a running instance.

- **Improvement:**

Fix Version: 7.22.5

**Improvement:** the `POST /entities/{entityUuid}/constraints/entities` request is now paginated, adding the `cursor` and `limit` parameters.

- **Improvement:**

Fix Version: 7.22.5

**Improvement:** To support more rapid reservation planning, the call to create a reservation has changed. It no longer takes the `apiCallBlock` parameter when you create the reservation. By default every reservation is created in an asynchronous mode.

To execute call blocking, and create the reservation in synchronous mode, you first create the reservation, and then execute a call to GET the reservation by ID, and pass the parameter `callBlocking=true`.

- **Improvement:**

Fix Version: 7.22.4

**Improvement:** In the `RangeApiDTO`, the `customStepValues` field has been replaced with the `stepValues` field. This field now accepts a list of float values.

- **Improvement:**

Fix Version: 7.22.4

**Improvement:** The search filters for `Application` and `ApplicationServer` have been replaced by the `ApplicationComponent` entity type, which will return entities that formerly used the deprecated values.

- **Improvement:**

Fix Version: 7.22.4

**Improvement:** The boolean search filter `UserDefinedEntity` has been implemented to filter results by entities that Turbonomic discovers or user-created entities.

`True`: Return only entities discovered by a user-defined topology probe.

`False`: Return only entities discovered by a Turbonomic probe.

- **Improvement:**

Fix Version: 7.22.100-MPC

**Improvement:** The `POST /scenarios` request now accepts multiple migration sources in the `MigrateObjectApiDTO` using the `sources` parameter. The `destinations` parameter was also implemented, deprecating the `source` and `destination` parameters, respectively

- **Improvement:**

Fix Version: 7.22.3

**Improvement:** When requesting storage-related metrics, these metrics are now gathered and reported from the `volume` entity instead of the `VirtualMachine` entity.

When requesting `StorageAmount` or `StorageAccess` commodities, these commodities will return commodities bought from the associated `volume` entity.

When requesting `StorageAmount`, `StorageAccess`, and `IOThroughput` commodities with the `relatedEntityType = VirtualMachine` parameter now returns commodities bought by volume from `Storage Tier`.

- **Improvement:**

Fix Version: 7.22.2

**Improvement:** The following search filters are now available for `Business User` and `Desktop Pool` entities:

- `businessUserByDesktopPool`
- `businessUserByViewPod`
- `DesktopPoolByViewpod`

- **Improvement:**

Fix Version: 7.22.1

**Improvement:** The following search filters are now available for Containers, Container Pods, Container Specs, Namespace, and Workload Controller entities:

- `containersByNamespace`
- `containerPodsByNamespace`
- `containerSpecsByName`
- `containerSpecsByNamespace`
- `namespacesByName`
- `workloadControllersByName`
- `workloadControllersByNamespace`
- `workloadControllersByKind`

Additionally, the following search filters were refactored to return expected results:

- `containersByPodName`
- `containerPodsbyVMName`

- **Improvement:**

Fix Version: 7.22.1

**Improvement:** The new setting `containerRateOfResize` was added to the `marketsettingsmanager`.

This setting contains the global resize rate for Container entities.

- **Improvement:**

Fix Version: 7.22.1

**Improvement:** The `telemetrymanager` settings manager has been implemented. This settings manager contains a single boolean setting, `telemetryEnabled`. When `true`, telemetry data will be collected and sent periodically

- **Improvement:**

Fix Version: 7.22.1

**Improvement:** This release improves the support for API searches. When searching a scope of a given `ServiceProvider`, the API returns associated entities, actions, and aspects. Search also returns a `virtualDiskAspect` for Delete actions on virtual volumes.

- **Improvement:**

Fix Version: 7.22.0

**Improvement:** The API now includes support for the CSP (Cloud Service Provider) filter type in Stats calls.

- **Improvement:**

Fix Version: 7.22.0

**Customer Issue 108434,108988**

**Improvement:** When searching for entities or creating groups, you can create a filter by Resource Group. With this release, you can now use REGEX expressions for the filter criteria.

- **Improvement:**

Fix Version: 7.21.5

**Improvement:** To support requirements in the user interface, and to streamline internal data usage, the API must change the naming it uses for commodities in Action DTOs.

For example, the following RISK object in the action DTO shows a commodity in the `reasonCommodity`:

```
"risk": {
  "subCategory": "Performance Assurance",
  "description": "Storage Provisioned congestion in Storage vsanDatastore",
  "severity": "CRITICAL", "importance": 0.0,
  "reasonCommodity": "StorageProvisioned"
}
```

The names change as follows:

| Old Value              | New Value           |
|------------------------|---------------------|
| CLUSTER                | ClusterCommodity    |
| THREADS                | Threads             |
| CPU_ALLOCATION         | CPUAllocation       |
| NUMBER_CONSUMERS       | NumberConsumers     |
| FLOW_ALLOCATION        | FlowAllocation      |
| Q1_VCPU                | Q1VCPU              |
| STORAGE_PROVISIONED    | StorageProvisioned  |
| LICENSE_COMMODITY      | LicenseCommodity    |
| STORAGE_AMOUNT         | StorageAmount       |
| Q16_VCPU               | Q16VCPU             |
| Q32_VCPU               | Q32VCPU             |
| SAME_CLUSTER_MOVE_SVC  | SameClusterMoveSvc  |
| Q3_VCPU                | Q3VCPU              |
| SLA_COMMODITY          | SLACommodity        |
| CROSS_CLUSTER_MOVE_SVC | CrossClusterMoveSvc |
| NUMBER_CONSUMERS_PM    | NumberConsumersPM   |
| STORAGE_ALLOCATION     | StorageAllocation   |
| Q8_VCPU                | Q8VCPU              |
| SPACE                  | Space               |

| Old Value                | New Value              |
|--------------------------|------------------------|
| Q6_VCPU                  | Q6VCPU                 |
| POWER                    | Power                  |
| MEM                      | Mem                    |
| STORAGE_LATENCY          | StorageLatency         |
| Q7_VCPU                  | Q7VCPU                 |
| COOLING                  | Cooling                |
| PORT_CHANEL              | PORT_CHANNEL           |
| VCPU                     | VCPU                   |
| QN_VCPU                  | QNVCPU                 |
| CPU_PROVISIONED          | CPUProvisioned         |
| RIGHT_SIZE_SVC           | RightSizeSVC           |
| MOVE                     | Move                   |
| Q2_VCPU                  | Q2VCPU                 |
| Q5_VCPU                  | Q5VCPU                 |
| SWAPPING                 | Swapping               |
| SEGMENTATION             | SegmentationCommodity  |
| FLOW                     | Flow                   |
| DATASTORE                | DatastoreCommodity     |
| CROSS_CLOUD_MOVE_SVC     | CrossCloudMoveSvc      |
| RIGHT_SIZE_DOWN          | RightSizeDown          |
| IO_THROUGHPUT            | IOThroughput           |
| CPU                      | CPU                    |
| BALLOONING               | Ballooning             |
| VDC                      | VDCCommodity           |
| Q64_VCPU                 | Q64VCPU                |
| CONNECTION               | Connection             |
| MEM_PROVISIONED          | MemProvisioned         |
| STORAGE                  | Storage                |
| NET_THROUGHPUT           | NetThroughput          |
| NUMBER_CONSUMERS_STORAGE | NumberConsumersStorage |

| Old Value                  | New Value                |
|----------------------------|--------------------------|
| TRANSACTION                | Transaction              |
| MEM_ALLOCATION             | MemAllocation            |
| DSPM_ACCESS                | DSPMAccessCommodity      |
| RESPONSE_TIME              | ResponseTime             |
| VMEM                       | VMem                     |
| ACTION_PERMIT              | ActionPermit             |
| DATACENTER                 | DataCenterCommodity      |
| APPLICATION                | ApplicationCommodity     |
| NETWORK                    | NetworkCommodity         |
| Q4_VCPU                    | Q4VCPU                   |
| STORAGE_CLUSTER            | StorageClusterCommodity  |
| EXTENT                     | Extent                   |
| ACCESS                     | Access                   |
| RIGHT_SIZE_UP              | RightSizeUp              |
| VAPP_ACCESS                | VAppAccess               |
| STORAGE_ACCESS             | StorageAccess            |
| VSTORAGE                   | VStorage                 |
| DRS_SEGMENTATION           | DrsSegmentationCommodity |
| DB_MEM                     | DBMem                    |
| TRANSACTION_LOG            | TransactionLog           |
| DB_CACHE_HIT_RATE          | DBCACHEHitRate           |
| HOT_STORAGE                | HotStorage               |
| COLLECTION_TIME            | CollectionTime           |
| BUFFER_COMMODITY           | BufferCommodity          |
| SOFTWARE_LICENSE_COMMODITY | SoftwareLicenseCommodity |
| VMPM_ACCESS                | VMPMAccessCommodity      |
| HA_COMMODITY               | HACommodity              |
| NETWORK_POLICY             | NetworkPolicy            |
| HEAP                       | Heap                     |
| DISK_ARRAY_ACCESS          | DISK_ARRAY_ACCESS        |

| Old Value               | New Value             |
|-------------------------|-----------------------|
| SERVICE_LEVEL_CLUSTER   | ServiceLevelCluster   |
| PROCESSING_UNITS        | ProcessingUnits       |
| HOST_LUN_ACCESS         | HOST_LUN_ACCESS       |
| COUPON                  | Coupon                |
| TENANCY_ACCESS          | TenancyAccess         |
| LICENSE_ACCESS          | LICENSE_ACCESS        |
| TEMPLATE_ACCESS         | TemplateAccess        |
| NUM_DISK                | NumDisk               |
| ZONE                    | Zone                  |
| ACTIVE_SESSIONS         | ActiveSessions        |
| POOL_CPU                | PoolCPU               |
| POOL_MEM                | PoolMem               |
| POOL_STORAGE            | PoolStorage           |
| IMAGE_CPU               | ImageCPU              |
| IMAGE_MEM               | ImageMem              |
| IMAGE_STORAGE           | ImageStorage          |
| INSTANCE_DISK_SIZE      | InstanceDiskSize      |
| INSTANCE_DISK_TYPE      | InstanceDiskType      |
| BURST_BALANCE           | BurstBalance          |
| TEMPLATE_FAMILY         | Unknown               |
| DESIRED_COUPON          | DesiredCoupon         |
| VCPU_REQUEST            | VCPURequest           |
| VMEM_REQUEST            | VMemRequest           |
| VCPU_REQUEST_QUOTA      | VCPURequestQuota      |
| VMEM_REQUEST_QUOTA      | VMemRequestQuota      |
| NETWORK_INTERFACE_COUNT | NetworkInterfaceCount |
| BICLIQUE                | Biclique              |
| VCPU_LIMIT_QUOTA        | VCPULimitQuota        |
| VMEM_LIMIT_QUOTA        | VMemLimitQuota        |
| UNKNOWN                 | Unknown               |

- **Improvement:**

Fix Version: 7.21.5

**Improvement:** When you request actions, if one or more of the entities in the scope of your request no longer exists in the topology, the Actions DTO for such entities will contain minimal information about the entities.

For earlier releases, the request would fail because the call could not return full information about the entity. However, there are circumstances where such a scope is valid for an actions request. For example, you can request actions history for entities that did exist within the time period of your request.

- **Fixed Issue:**

Fix Version: 7.22.6

**Customer Issue 111970**

For API developers, the API calls for STATS do not return the full set of stat values.

- **Fixed Issue:**

Fix Version: 7.22.7

**Fixed:** When providing an invalid `ScenarioApiInputDTO` for scenario creation, the API will return an appropriate error. Instead, the API returned 200 with an invalid Scenario UUID.

- **Fixed Issue:**

Fix Version: 7.22.6

**Customer Issue 110316,110341**

**Fixed:** Using the API, it is now possible to set the `minObservationPeriod` parameter to an integer value between 1 and 90. The UI will continue to support the current implementation (a value between 1 and 7).

- **Fixed Issue:**

Fix Version: 7.22.6

**Customer Issue 111123,111168**

Under some circumstances, when you add a Risks Avoided chart or display a dashboard that contains that chart, the API component generates the error, `ERROR [qtp636782475-405] [HistoricalQueryMapper] : Unhandled action stats group-by criteria: risk`. As a result, the chart display can be incomplete.

- **Fixed Issue:**

Fix Version: 7.22.5

**Fixed:** Reservations must now have a unique display name.

- **Fixed Issue:**

Fix Version: 7.22.4

**Fixed:** The AppDynamics and Dynatrace targets now correctly appear in the Applications and Databases target category.

- **Fixed Issue:**

Fix Version: 7.22.3

**Fixed:** When creating a scenario for a plan, you must provide a scope for the scenario. If you do not include a scope in a scenario, then the API should return a 400 error. However, the API returns 200.

- **Fixed Issue:**

Fix Version: 7.22.3

**Fixed:** For the Potential Savings chart, when you click **Show All** to display the Potential Savings table, and then scope it to Delete Volumes, the list displays unattached volumes that you can delete. However, for Azure environments this list can also include unattached volumes that are not eligible for deletion.

When getting detached volumes, you can now include the filter `volumeByDeletable`, which returns `true` if the given volume is eligible for deletion.

- **Fixed Issue:**

Fix Version: 7.22.3

**Customer Issue 110888**

**Fixed** For environments with empty clusters (no hosts in the cluster), the display of Headroom charts can be misleading. Turbonomic should not calculate headroom for empty clusters.

- **Fixed Issue:**

Fix Version: 7.22.4

**Customer Issue 111019**

**Fixed:** When creating a template, the API formerly accepted a statistic parameter for `diskIopsConsumed`. However, this parameter is not supported and has been removed from this version of Turbonomic. Instead, send this value using the `diskIops` parameter.

- **Fixed Issue:**

Fix Version: 7.22.3

**Fixed:** When you get a discovered group, the returned data should include information about the target that discovered the group.

For discovered groups the API now includes a `TargetApiDTO` that identifies the target that discovered the group.

Note that in the case of a discovered resource group, the members can be discovered by multiple targets. As of this release, in that case the API arbitrarily returns a single target for the group.

- **Fixed Issue:**

Fix Version: 7.22.1

**Fixed:** The POST `/actions` request now correctly accepts an `ActionApiInputDTO` and returns the expected filtered results.

Additionally, pagination is implemented for this call.

- **Fixed Issue:**

Fix Version: 7.22.2

**Fixed:** The API call to get stats for entities ignores the parameter to filter the response by entity state.

- **Fixed Issue:**

Fix Version: 7.22.0

Fix Version: 7.22.1

**Fixed:** Under some circumstances, the Headroom charts can fail to show complete data. When this occurs, the charts can fail to show data for a 2-hour time frame or for a 1-year time frame. In addition, the charts can fail to show data for all the resources they monitor.

This fix addresses the restriction only one stat snapshot per cluster is returned by the API. The cluster stats endpoints can now:

- Return more than one snapshot
- Return projected stats
- Return total headroom
- Sort by total headroom utilization

- **Fixed Issue:**

Fix Version: 7.22.0

**Fixed:** As part of security updates, the API no longer includes the following obsolete SAML endpoints:

- `saml`
- `saml/idpmetadata`
- `saml/keystore`

- **Fixed Issue:**

Fix Version: 7.21.5

Fix Version: 7.22.0

**Customer Issue 110627**

**Fixed:** For API developers, the POST method to get stats does not always return the full set of data that you request. If you include a filter to return a count of entities (for example `numVMs`), along with other types of stats, the count of entities returns zero.

- **Fixed Issue:**

Fix Version: 7.21.5

**Customer Issue 110207**

**Fixed:** For API development, when you edit a workload placement policy via the PUT method, the API returns an empty `PolicyApiDto` object. The API should return an object that reflects the modified policy.

- **Fixed Issue:**

Fix Version: 7.22.0

**Fixed:** For filtered STATS requests, the API now supports the `relatedEntityType` filter.

- **Known Issue:**

**Customer Issue 110650**

**Known Issue:** When retrieving statistics for a cluster, using the `/groups` endpoint will return the aggregated statistics for all applicable cluster entities, and using the `/stats` endpoint returns the statistics for each individual entity.